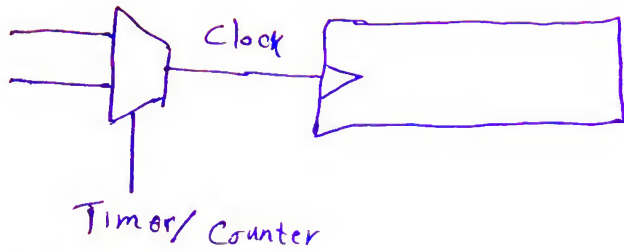
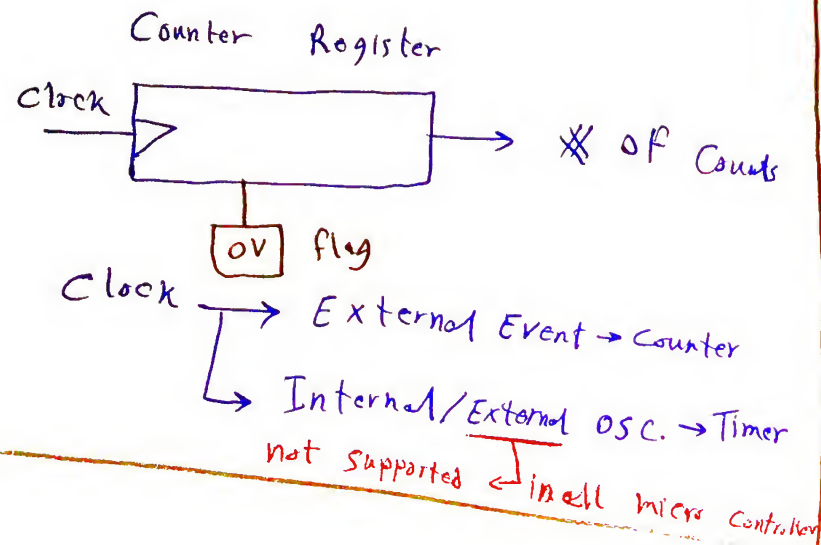


Timer / Counters



$$\text{time} = \underbrace{n}_{\substack{\text{* of Counts}}} T$$

Over Flow Flag is rised
when counting up from
FFH to 00H

$$\text{Counter} \leftarrow 256 - n$$

↳ 8-bit ↳ wanted number of Counts
↳ Value in register

If we wants to count
number of event occurence
we initialize the counter
with 00H

Dealing with OV flag

- 1- check the OV flag
Periodically (has many cons.)
- 2- Using Interrupt (Timer Interrupt)

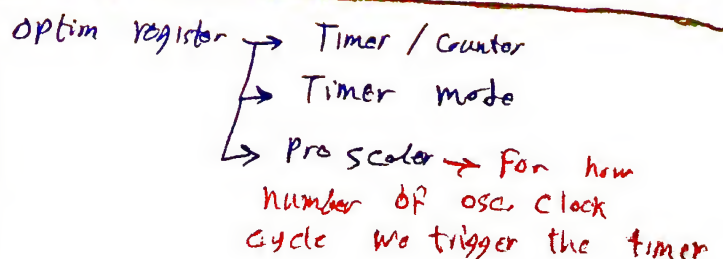
We need to reset OV flag
in software after interrupt

in Software/hardware

- 1- We need to know
Clock Source
- 2- We need to know how
to access the register
- 3- We need to know how
to configure it as Timer
or Counter

Registers

- 1- Timer Register
- 2- Port for clock (Counter)
- 3- Option Register (Timer / counter)
(internal / external)
- 4- Interrupt Register
 ↳ Flag ↳ interrupt



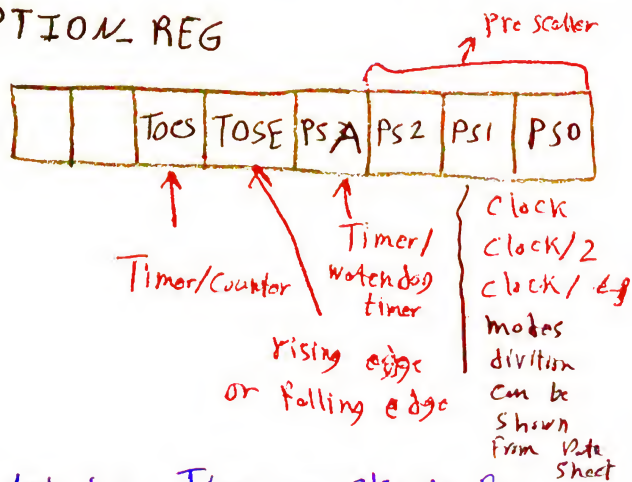
timer 0 8-bit timer
 timer 1 16 bit timer
 timer 2 8 bit timer

timer 0

PIC

TMRO : timer register

OPTION REG



Watch dog Timer → check for
 failure or infinity loop
 with no actions

INTCON : interrupt register



PEIE → Peripheral interrupt → 1

TOIE → Timer Zero Interrupt Enable

TOIF → Timer Zero Interrupt Flag

Task

Push Button

2 LED

- One Led Blinking each 5 second
- other on When pressing Push Button

Void interrupt(void) {

// check Flag

}